

Notice of Allowability

Application No.

10/652,753

Applicant(s)

AN ET AL.

Examiner

Srirama Channavajjala

Art Unit

2166

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 6/15/06.
2. ☐ The allowed claim(s) is/are 1-4, 7, 10 and 12-20.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).


* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date 5/31/07.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.


Srirama Channavajjala
Primary Examiner
Art Unit: 2166

DETAILED ACTION

1. Claims 1-4,7,10,12-20 are allowed.

Drawings

2. The Drawings filed on 8/28/2003 are acceptable for examination purpose.

Information Disclosure Statement

3. The information disclosure statement filed on 8/28/2003 is in compliance with the provisions of 37 CFR 1.97, and has been considered and a copy is enclosed with this Office Action.

4. Examiner acknowledges applicant's "terminal disclaimer" filed on 5/31/2007.

35 USC § 101

5. In view of applicant's amendment to specification and claims, the rejection under 35 USC 101 as set forth in the previous office action is hereby withdrawn.

Interview:

6. Applicant's Attorney Sean F. Sullivan, Reg.No. 38,328 is thanked for the telephone interview on 31 May 2007. During that telephone Sean F. Sullivan granted authorization to amend claims **1,19,20** and cancel claims **5,6,8,9,11,19.**

EXAMINER'S AMENDMENT

7. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Applicant's Attorney Sean F. Sullivan, Regd.No. 38,328, on 31 May 2007.

The application has been amended as follows:

1. (currently amended) A method for generating service's state data and extensible meta-data information with a service oriented state data generator (SSDG) comprising: establishing a platform independent, extensible meta-data model for said meta-data information;

obtaining state data schema based on a service state data description, said meta-data model supported with a drag and drop window system wherein a service developer can annotate said state data schema by drag and drop meta-data information;

defining an extensible set of meta-data attributes and templates corresponding to said meta data based on requirements of a service, wherein said defining meta-data attributes includes defining extensible service state data constraints

Art Unit: 2166

and defining one or more relationships among said state data of a service, wherein said extensible service state data constraints include at least one of; constraints on mutability of said state data of a service; constraints on validity of said state data of a service including life time constraints; and constraints cardinality of said state data of a service;

utilizing said meta-data model and based on said state data schema and said attributes, generating state data of a service based on said service's state data schema; and

said state data of a service including at least one of: state data (temporal or fixed), state data logical mapping, state data physical mapping, meta-data associated with said service's state data and meta-data model correlations associated with said meta-data; and

enabling a user to define a mapping between meta-data and state data of a service; said data mapping including at least one of a logical abstraction of said state data of a service wherein the abstraction holds references to real service instance data, and a direct mapping comprises a direct mapping to state data of a service;

wherein said meta-data modeling provides flexibility in generating said state data of a service by providing versioning, compatibility, and a flexible design process and a standard code generation, and said meta-data modeling is indicative of schema or meta-data for said service state meta-data.

Art Unit: 2166

2. (previously presented) The method of Claim 1 further including generating code to enable said service to support a query on said state data of a service and notification on change of state data of a service.

3. (previously presented) The method of Claim 1 further including generating code to enable said service to provide access mechanisms on said state data of a service.

4. (previously presented) The method of Claim 1 further including creating state data of a service from any data definition schema; wherein said data definition schema include at least one of XML Schema, DTD, RELAX NG custom schema definition languages, derivatives of said schema.

5. (cancelled)

6. (cancelled)

7. (original) The method of Claim 1 wherein said meta-data models employ a common language including XML or a derivative thereof for describing said meta-data that is extensible to support additional meta-data features.

8. (cancelled)

Art Unit: 2166

9. (cancelled)

10. (previously presented) The method of Claim 1 wherein said defining meta-data attributes includes extensible service state data qualifiers and:

defining notification qualifiers on said state data of a service to indicate whether a change in said service state data promulgates notification;

defining security requirements on said service state data discovery and notification; and

defining transaction qualifiers of said state data of a service.

11. (cancelled)

12. (previously presented) The method of Claim 1 wherein said defining meta-data attributes includes defining extensible service state data access mechanisms, wherein said extensible service state data access mechanisms include: a flexible callback mechanism on said state data of a service and expression through said meta-data; a data push mechanism for service state data update and expression through said meta-data; other extensible data access mechanisms on said state data of a service, including direct access to said state data of a service held in a database or direct access to state data through SNMP, CIM, Web services; and extensible custom template mechanisms for data access based on requirements of a service.

Art Unit: 2166

13. (original) The method of Claim 1 further including generating pluggable extension mechanisms for meta-data attributes.

14. (previously presented) The method of Claim 1 further including obtaining service developer feedback on meta-data generation for said state data of a service; based on said meta-data attributes.

15. (original) The method of Claim 14 wherein said service developer feedback is provided through custom dialog boxes; wherein said service developer can pass parameters to said service oriented state data generator; and wherein said service developer can provide templates to guide said generating and said mapping.

16. (previously presented) The method of Claim 1 further including a service developer creating a relationship between selected state data of a service.

17. (original) The method of Claim 1 further including validating software code based on said generating to ensure that said code is compatible with said meta-data model and said state data schema.

18. (original) The method of Claim 1 wherein said generator is configured as a pluggable framework to facilitate use as an eclipse plug in or included with other user interfaces frameworks.

Art Unit: 2166

19. (currently amended) A system for generating service state data and extensible meta-data information with a service oriented state data generator (SSDG) comprising:

a ~~means for establishing~~ tool set configured to establish a platform independent, extensible meta-data model for said meta-data information;

a ~~means for obtaining~~ the tool set configured to obtain state data schema based on a service state data description, said meta-data model supported with a drag and drop window system wherein a service developer can annotate said state data schema by drag and drop meta-data information;

a ~~means for defining~~ the tool set configured to define an extensible set of meta-data attributes and templates corresponding to said meta data based on requirements of a service, wherein said defining meta-data attributes includes defining extensible service state data constraints and defining one or more relationships among said state data of a service, wherein said extensible service state data constraints include at least one of; constraints on mutability of said state data of a service; constraints on validity of said state data of a service including life time constraints; and constraints cardinality of said state data of a service;

a ~~means for utilizing~~ the tool set configured to utilize the tool set configured to utilize said meta-data model and based on said state data schema and said attributes, generating state data of a service based on said service state data schema; and

said state data of a service including at least one of: state data, state data logical mapping, state data physical mapping, meta-data associated with said state data of a service and meta-data model correlations associated with said meta-data; and

the tool set configured to enable a user to define a mapping between meta-data and state data of a service; said data mapping including at least one of a logical abstraction of said state data of a service wherein the abstraction holds references to real service instance data, and a direct mapping comprises a direct mapping to state data of a service;

wherein said meta-data modeling provides flexibility in generating said state data of a service by providing versioning, compatibility, and a flexible design process and a standard code generation, and said meta-data modeling is indicative of schema or meta-data for said service state meta-data.

20. (currently amended) A computer storage medium encoded with a machine computer-readable computer program code, said code including instructions for causing a computer to implement a method for generating service state data and extensible meta-data information with a service oriented state data generator (SSDG), the method comprising:

establishing a platform independent, extensible meta-data model for said meta-data information;

obtaining state data schema based on a service state data description,
said meta-data model supported with a drag and drop window system wherein a service

Art Unit: 2166

developer can annotate said state data schema by drag and drop meta-data information;

defining an extensible set of meta-data attributes and templates corresponding to said meta data based on requirements of a service, wherein said defining meta-data attributes includes defining extensible service state data constraints and defining one or more relationships among said state data of a service, wherein said extensible service state data constraints include at least one of; constraints on mutability of said state data of a service; constraints on validity of said state data of a service including life time constraints; and constraints cardinality of said state data of a service;

utilizing said meta-data model and based on said state data schema and said attributes, generating state data of a service based on said service state data schema; and

said state data of a service including at least one of: state data, state data logical mapping, state data physical mapping, meta-data associated with said state data of a service and meta-data model correlations associated with said meta-data; and

enabling a user to define a mapping between meta-data and state data of a service; said data mapping including at least one of a logical abstraction of said state data of a service wherein the abstraction holds references to real service instance data, and a direct mapping comprises a direct mapping to state data of a service;

wherein said meta-data modeling provides flexibility in generating said state data of a service by providing versioning, compatibility, and a flexible design

Art Unit: 2166

process and a standard code generation, and said meta-data modeling is indicative of schema or meta-data for said service state meta-data.

In the Title

Pursuant to MPEP 606.01 the Title is changed to read

**--METHOD AND APARATUS FOR GENERATING SERVICE ORIENTED
STATE DATA MAPPING BETWEEN EXTENSIBLE META-DATA MODEL AND
STATE DATA INCLUDING LOGICAL ABSTRACTION--**

Reasons for allowance

The following is an examiner's statement of reasons for allowance:

The present invention is directed to generating service state data and extensible meta-data information with a service oriented state data generator (SSDG), particularly service state data including state data, state data logical mapping, state data physical mapping, meta-data associated with the service state data and meta-data model correlations associated with the meta-data, further obtaining state data schema based on a service state data description, defining an extensible set of meta-data attributes and templates corresponding to the meta data based on requirements of a service.

The closest prior art Rasmussen et al. US Patent No. 6662188 filed on Sept 1, 2000 is directed to metadata model, more specifically a metadata model defines model objects to represent one or more data sources. The metadata model comprises a data access layer, a business layer and a package layer. The data access layer contains data access model objects. The data access model objects include a data access data source. The business layer contains business model objects. The business model objects include a business model object that describes a business view of data in the data source. The package layer contains package model objects. The package model objects include a package model object which references a subset of business model objects, further metadata exchange is used to obtain metadata from external physical sources [fig 2A, col 3, line 42-54, Abstract]

Art Unit: 2166

The closest prior art Singh et al. US Pub.No. 2004/0250238 filed on June 4, 2003 is directed to cross platform development for devices the heterogeneous capabilities, more specifically, application development system that is used in application at runtime comprises both a framework and associated runtime objects, further framework provides generic functionality and services for the application and noted that runtime objects effectively extend the generic services provided by the framework [page 1, col 2, 0007]. The framework includes a user interface layer, business object layer and a data access layer and is compatible with any arbitrary framework. It is further noted that business objects are associated with the BOL or business object layer and the business object is a modeling entity that attempts to group together properties, methods and event handlers in one group that are associated with actual business entities [page 1, col 2, 0009], page 3, col 2, 0049, fig 1a-1b]


It is however, noted that prior art of record Rasmussen et al and Singh et al. either along or in combination fails to anticipate or render obvious, the recited feature *“wherein said defining meta-data attributes includes defining extensible service state data constraints and defining one or more relationships among said state data of a service, wherein said extensible service state data constraints include at least one of; constraints on mutability of said state data of a service; constraints on validity of said state data of a service including life time constraints; and constraints cardinality of said state data of a service”* in claim 1,19-20

These features, together with the other limitations of the independent claims are novel and non-obvious over the prior art of record. The dependent claims 2-4,7,10, 12-18 being definite, enabled by the specification, and further limiting to the independent claim, are also allowable.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance".

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alam, Hosain, T, can be reached on (571) 272-3978. The fax phone numbers for the organization where the application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free)

SC
Patent Examiner.
June 04, 2007.


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PRIMARY EXAMINER